ICS-480V

4U Industrial Workstation with 8.4” LCD and 14 slots backplane

User’s Manual

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July 2004, Version V1.0

Printed in Taiwan

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ESD Precautions

Integrated circuits on computer boards are sensitive to static electricity. To avoid damaging chips from electrostatic discharge, observe the following precautions:

- Do not remove boards or integrated circuits from their anti-static packaging until you are ready to install them.
- Before handling a board or integrated circuit, touch an unpainted portion of the system unit chassis for a few seconds. This helps to discharge any static electricity on your body.
- Wear a wrist-grounding strap, available from most electronic component stores, when handling boards and components.

What To Do If There Is A Problem

If there are damaged or missing parts, contact your supplier and/or dealer immediately. Do not attempt to apply power to the board if there is damage to any of its components.

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Chapter 1 Introduction

1.1 Introduction

4U Industrial workstation with 8.4" LCD & 14 slots backplane. The ICS-480V is a 4U 14-slots Rackmount Workstation with 8.4" LCD display and Front panel function & data-entry keypad. This workstation is a full-function and cost-effective designed Industrial Automation Controller. The ICS-480V is available with several combinations of the backplane and power supply, which can apply to versatile applications.

The build-in VGA A/D board ensures the system compatible with variety of Single Board Computers from most of vendors. The front panel OSD controller allows user to tune the LCD into the best position for any environment. To enhance the system for easy maintenance and upgrade, the two front USB ports, 12 function keypad & 65 data-entry keypad have been build-in to the front panel. The air filter is located on the external top-cover which minimizes the system down time for air filter replacement. This ideal industrial-grade workstation can be applied to the various of industrial projects, such as transportation, factory automation, environmental surveillance, and more.

1.2 General Specification

- **Construction:** Heavy duty steel chassis
- **Drive bay:** Shock-proof and front accessible 5.25" by three drive bays.
- **Cooling system:** Single 86 CFM cooling fan with top-accessible air filters
- **Controls:** Power switch (on-off or momentary), reset switch, and keyboard lock behind lockable door
- **LED Indicator:** Power and HDD LED for system Power and Hard disk status LED for system power status
- **Connectors:** Front accessible USB and PS/2 key-board, rear panel 9-pin connector (9-pin connec-tor are not include in the M/B version)
- **Paint Color:** Black
- **Operating Temperature:** 0° ~ +50°C (32°F ~ 122°F)
- **Storage Temperature:** -50° ~ +60°C (-40°F ~ 140°F)
- **Relative Humidity:** 10~95%@40°C, non-condens-ing
- **Vibration:** 2G (Non-operation)/ 1G (Operation)
- **Slide rails:** General Device C-300 series supports
- **Dimensions:** 482.6(W) x 452(D) x 177(H)mm (19"x17.8"x7")
- **Weight:** 17-21kg
- **Safety:** CE compliant for integrated system

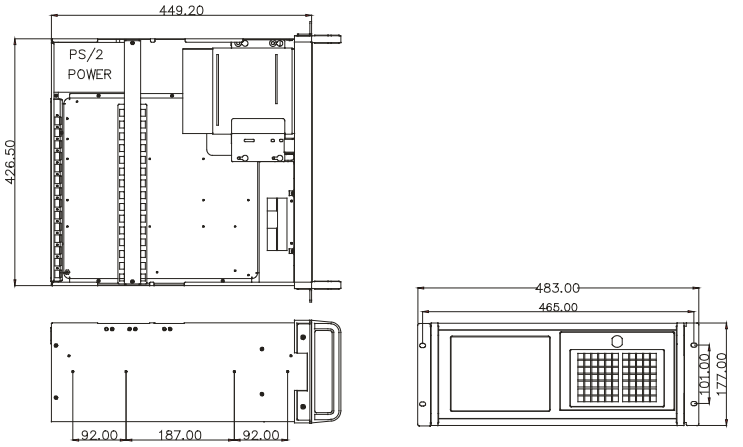
1.3 Passive Backplane Options

- **ATX6022/13L:** 8 ISA/ 4 PCI/ 1 PICMG, single segment
- **ATX6022/14:** 9 ISA/ 4PCI/ 1 PICMG, single segment
- **ATX6022/14G:** 1 ISA/ 12 PCI/ 1 PICMG, single segment
- **ATX6020/14:** 14 ISA, single segment
- For Manuals of above backplanes please refer to http://www.axiomtek.com.tw/support.php

1.4 Power Supply Options

Model name	Specification					
	Watt	Input	Output	Mini-load	Safety	MTBF
CWT-9300TC2 (AT)	300W	115/230Vac (Selectable)	+5V@ 30A +12V@10A -12V@1A -5V@1A	+5V@5A +12V@2A	UL,cUL,CSA,(UL60950 2nd) CE TUV, CB	100,000 hours@25° full loadSS
SS-300FS (ATXw/ PFC)	300W	90/264Vac (Fullrange)	+5V@ 30A +3.3V@28A +12V@15A -12V@0.8A -5V@0.5A +5Vsb@2A	+5V@2A +12V@1A	UL,cUL,CSA,CE EN61000-3-3 Class DTUV,PFC,-CB	>50,000 hours@25° (w/o FAN)
CWT-300 ATX12(ATX)	300W	115/230Vac (Selectable)	+5V@ 30A +3.3V@14A +12V@15A -12V@0.5A, -5V@0.5A, +5VSB@2A	+5V@3A +3.3V@0.5A +12V@0.5A +5VSB@0.2A	UL/TUV/CB	100,000 hours@25° full road
SNP-425C DC48 (AT)	250W	-40VDC~ -57VDC	+5V@ 30A +12V@12A -5V@ 2A -12V@2A	+5V@1A	UL/CSA/CE	

1.5 Dimensions



Chapter 2
System Setup

2.1 System Installation

WARNING: Before starting the installation process, be sure to shut down all power from the chassis. Do this by turning off the power switch, and unplugging the power cord from the power outlet. When in doubt, consult with an experienced technician.

2.1.1 Removing the top cover

First, remove the chassis cover. The top cover is fixed to the chassis by four screws.

1. Release four screws on the sliding rail of both sides.
2. Lift the cover.

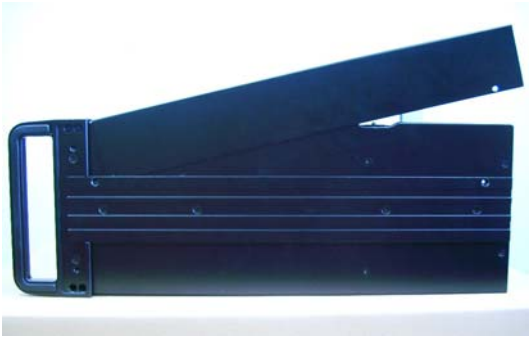


Figure 2.1: Top Cover

2.1.2 Chassis Front and Rear Sections

Face to the front view of ICS-480V, you will find a 8.4" TFT display module. There is a front door on the left side of the front panel, which has 12 function keys and 65 data entry keys on it. The front panel switches and I/O interface behind the door are used for system reset, power switch, USB port, OSD control, and keyboard lock.

Figure 2.2: Front View

2.1.3 Front Control

System Reset: Press this switch to reinitialize the system. This is the same as the hardware reset button.

Power On/Off Switch: Use this switch to turn on/off the system power.

USB port: If you want to connect any USB interface device to the system, you could use this.

Keylock: To lock the keyboard control.

KB/MB IN: Integrated PS/2 type 6-pin Keyboard and Mouse port.

Figure 2.3: Front Control

2.1.4 Drive Bay Installation

The standard type of the drive bay of ICS-480V can hold up to three external 5.25" devices (or two 5.25" and one 3.5" devices) and one 3.5" HDD. Axiomtek also offer the 5.25" to 3.5" holder (GHA-FM01.) Customer can install this holder on the 5.25" drive bays to get extra 3.5" drive bays.

1. Remove the top cover
2. Release the four screws from the top of the Drive Bay Module
3. Lift off the Drive Bay Module
4. Insert the devices into the proper location of the Drive Bay Module and secure them with the screws provided (See Figure 2.5)
5. Connect the disk drive power and signal cables and re-install the Drive Bay Module to the chasses

Figure 2.4: Drive Bay

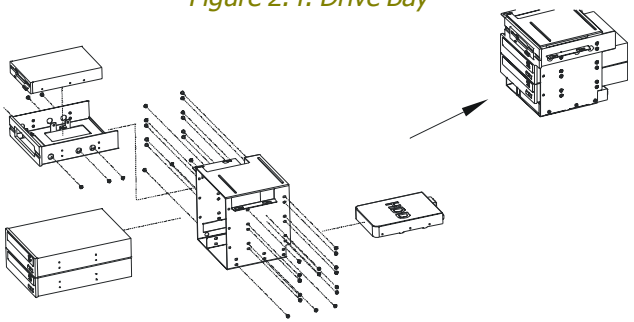


Figure 2.5: Explosive Diagram of Drive Bay

2.1.5 CPU card Installation

To install slot board computers and other add-on boards:

1. Remove the chassis cover.
2. Take out the hold down cramp
3. Insert the SBC or add-on cards on suitable location
4. Before connect system cables to the CPU card, please consult the CPU card manual.
5. Align and fix the screw to tighten the card to a fixed position

Figure 2.6: SBC Hold down Cramp

2.1.6 Cable connection for CPU card

There four cables come with the ICS-480 barebone; HDD LED, Reset Switch, Speaker, and Keyboard Lock. Please refer to your SBC manual to connect these four jumpers to the SBC.

Figure 2.7: System Cables

2.2 Cable Connection for A/D Board & Fan Power, Power Switch, and Keyboard Control

There is one four pins power connector need to be connected to the power supply to provide power to the A/D board and system Fan.

a. This cable should be connected to the system power supply. There are three cables needs to be connect to the backplane.

b. Keyboard Transmitter for Front Membrane Keypad & DIN 5-pin Keyboard port.

c. Rear DIN 5-pin Keyboard Port.

d. Power Switch.

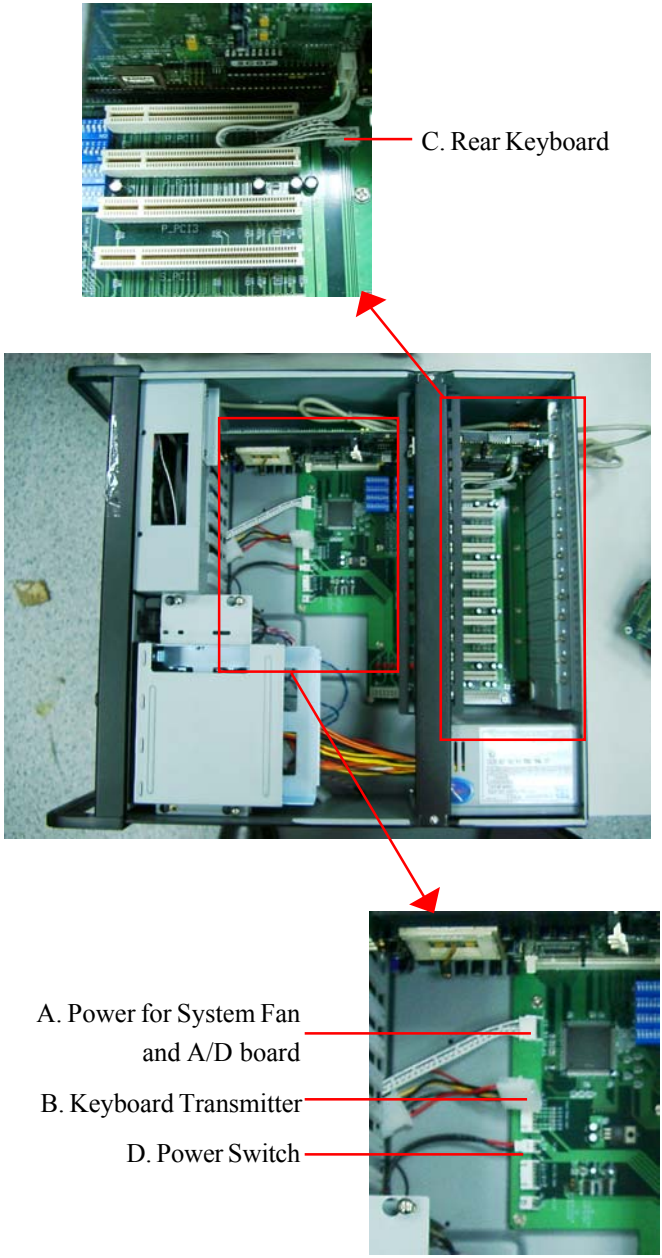


Figure 2.8: Cable Connection

2.3 Power Supply

ICS-480V is with a power supply bracket; please use this bracket for PS/2 power and remove this bracket if you want to install redundant power supply.

Figure 2.9: Power

2.4 Air Filter Replacement

There is one Cooling Fans located inside the chassis behind the LCD. The Air Filter is easy to maintain. To replace the Air Filter please refer to Figure 2.11

a. Release the two screws on the Air Filter holder

b. Take out the Air Filter and replace with the new one.

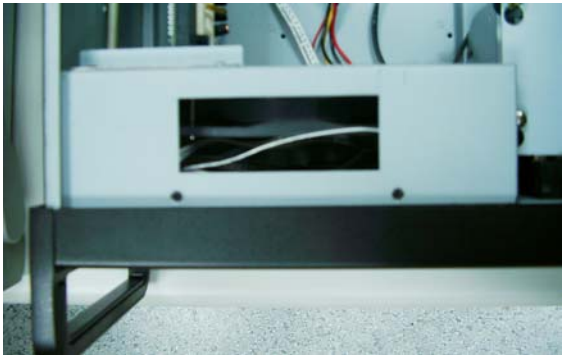


Figure 2.10: System Fan

Figure 2.11: Air Filter

2.5 VGA Cable Installation

The ICS-480V is an innovation version workstation, which supports most Single Board Computer from most IPC vendors. AXIOMTEK had integrated the VGA A/D board to the ICS-480V. As long as the SBC has the industrial standard 9-pin D-sub, it can be installed in the ICS-480V.

To connect the VGA Cable:

a. Please take out the VGA Cable (as shown in Figure 2.12) from the accessory kit.

b. Connect the end with core to the SBC and the other end to the A/D board (As shown on the Figure 2.13)

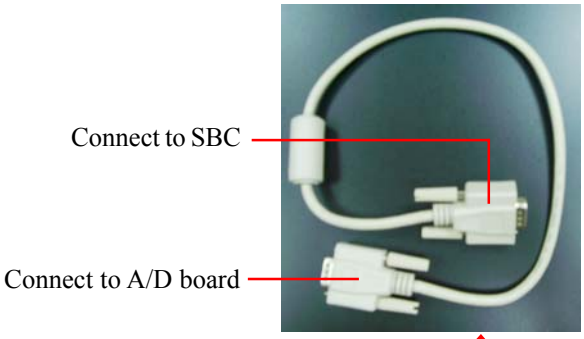


Figure 2.12: VGA

Figure 2.13: VGA Cable Connection OSD Control

Main Menu	Range of Control
Brightness	0~100
Contrast	0~100
Horizent Position	0~100
Vertical Position	0~100
Phase	0~100
Dimming	0~100
Reset	Reset to default value
Exit OSD	

Appendix A
Safety Instructions

B.1 Safety Instructions

1. Read these safety instructions carefully.
2. Keep this User's Manual for later reference.
3. Disconnect this equipment from any AC outlet before cleaning. Use a damp cloth. Do not use liquid or spray detergents for cleaning.
4. For plug-in equipment, the power outlet socket must be located near the equipment and must be easily accessible.
5. Keep this equipment away from humidity.
6. Put this equipment on a reliable surface during installation. Dropping it or letting it fall may cause damage.
7. The openings on the enclosure are for air convection. Protect the equipment from over-heating. DO NOT COVER THE OPENINGS.
8. Make sure the voltage of the power source is correct before connecting the equipment to the power outlet.
9. Position the power cord so that people cannot step on it. Do not place anything over the power cord.
10. All cautions and warnings on the equipment should be noted.
11. If the equipment is not used for a long time, disconnect it from the power source to avoid damage by transient overvoltage.
12. Never pour any liquid into an opening. This may cause fire or electrical shock.
13. Never open the equipment. For safety rea-sons, the equipment should be opened only by qualified service personnel.
14. If one of the following situations arises, get the equipment checked by service personnel:

a. The power cord or plug is damaged.

b. Liquid has penetrated into the equipment.

c. The equipment has been exposed to moisture.

d. The equipment does not work well, or you cannot get it to work according

to the user's manual.

e. The equipment has been dropped and damaged.

f. The equipment has obvious signs of breakage.

15. DO NOT LEAVE THIS EQUIPMENT IN AN ENVIRONMENT WHERE THE STORAGE TEMPERATURE MAY GO BELOW -20° C (-4° F) OR ABOVE 60° C (140° F). THIS COULD DAMAGE THE EQUIPMENT. THE EQUIPMENT SHOULD BE IN A CONTROLLED ENVIRONMENT.

Th sound pressure level at the operators position according to IEC 704-1:1982 is no more than 70dB(A).

DISCLAIMER: This set of instructions is given according to IEC 704-1. AXIOMTEK disclaims all responsibility for the accuracy of any statements contained herein.

16. Any insulation on conductors inside EQUIPMENT which connect ACCESSIBLE METAL PARTS or other PROTECTIVELY EARTHED parts with a protective function to the PROTECTIVE EARTH TERMINAL shall be identified by the colrs green and yellow at lease at the termination of the conductors.

17. CAUTION: The computer is provided with a Battery-powered Real-Time Clock Circuit. There is a danger of explosion if battery is incorrectly replaced. Replace only with same or equivalent typed recommended by the manufacturer. Discard use batteries according to the manufacturers instructions.

18. The computer is provided with appropriate safety standards including lec 60826.

19 Install the computer. Before your begin make sure the Green/Yellow wire reliable connection between metal part of computer and earthing of final system.